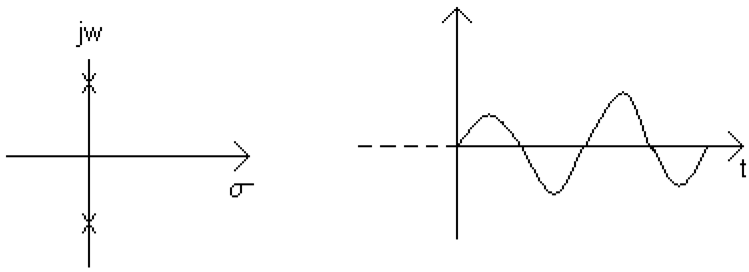
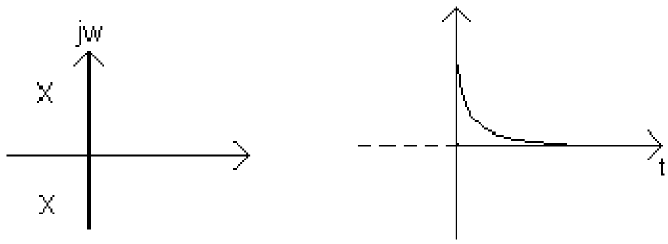
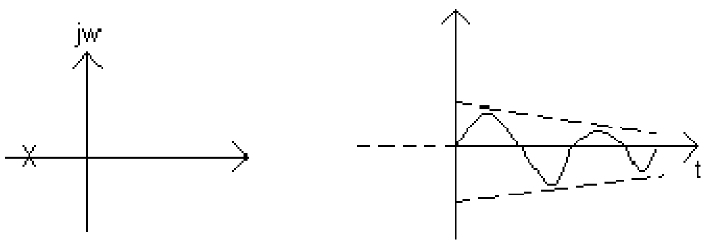
JNTU ONLINE EXAMINATIONS [Mid 2 - ldsa]
1. A polynomial P(s) is said to be hurwitz _ _ _ _ _ _ _ _ _ _ _ _ _ _ conditions are satisfied [01D01]
a. P(s) is real when s is real
b. the roots of P(s) have real parts, which are to be zero or negative.
c. P(s) is real when s is real and the roots of P(s) have real parts, which are to be zero or negative.
d. P(s) is real when S is not real
2. Which of the following pairs of poles and responses is correctly matched ? [01G01]
a. Consider Figure (a)



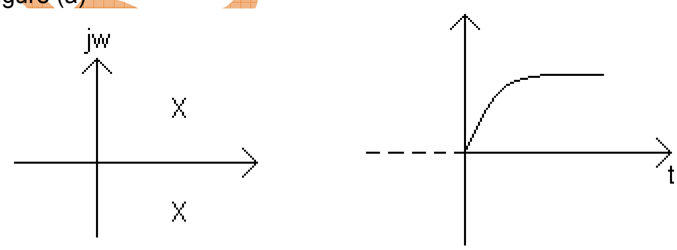
Figure(a)
b. Consider Figure (a)



Figure(a)
c. Consider Figure (a)



Figure(a)
d. Consider Figure (a)



Figure(a)
3. Network function H(s) is defined as the ratio of [01G02]
a. response the excitation
b. excitation to response
c. output to input
d. none
4. For a transfer function H(s) = P(s)/Q(s) where P(s) & Q(s) are polynomials of s [01M01]
a. the degree of P(s) and Q(s) are same
b. the degre of P(s) is always greater then that of Q(s)
c. the degree of P(s) is independent of the degree of Q(s)
d. the maximum degree of P(s) and Q(s) differ by one
5. Consider the following statements regarding positive real function F(s)
i) F(s) is real when s is real

ii) F(s) 0, when Re(s) 0
iii) The poles and zeros of F(s) are in the right half of the s plane out of these statement [01S01]
a. i) and ii) are correct
b. i) and iii) are correct
c. ii) and iii) are correct
d. i), ii) and iii) are correct
6. The polynomial P(s) = (S - 1)(S2+1) (S+2)(S+3) is [01S02]
a. hurwitz but not strict hurwitz
b. not hurwitz
c. strict hurwitz
d. anti hurwitz
7. The roots of H(s) have real parts, which are to be [02D01]
a. zero
b. negative
c. positive
d. zero or negative
8. The roots of H(s) have real parts, which are to be [02D02]
a. zero
b. negative
c. positive
d. zero or negative

9. H(s) which is the ratio of the response V0(s) to the excitation Vi(s) $H(s) = \frac{V_0(s)}{V_i(s)} =$
[02G01]
a. $\frac{a_n S^n + a_{n+1} S^{n+1} + a_{n-2} S^{n-2} + \ldots + a_1 S^1 + a_0}{b_m S^m + b_{m-1} S^{m-1} + b_{m-2} S^{m-2} + \ldots + b_1 S^1 + b_0}$
b. $\frac{a_n S^n + a_{n-1} S^{n-1} + a_{n-2} S^{n-2} + \ldots + a_1 S^1 + a_0}{b_m S^{m-1} + b_{m-1} S^{m-1} + b_{m-2} S^{m-2} + \ldots + b_1 S^1 + b_0}$
c. $\frac{b_m S^n + a_{n-1} S^{n-1} + a_{m-2} S^{m-2} + \ldots - a_1 S^1 + a_0}{b_n S^{m-1} + b_{m-1} S^{m-1} + b_{m-2} S^{m-2} + \ldots - b_1 S^1 + b_0}$
d. none
10. Whether the network h(f) could be realized as a physical passive network leading to the stydy of what is known as
[02G02]
a. lizability
b. realizability
c. lizability or realizability
d. none
11. Check whether the function $H(s) = \frac{8.s}{s+1}$ **is a positiv real function [02M01]**
a. prf
b. not a prf
c. Hurnitz function
d. negative real function
12. If all the coefficients of the continued fraction expansion are positive the given polynomial is [02S01]
a. Hurwitz
b. Nyquist
c. Rouths
d. partial real function
13. Check whether the function $H(s) = \frac{s+2}{s+1}$ **is a positive real functions (prf) [02S02]**
a. positive real function
b. not a prf
c. partial real function
d. negative real function
14. Which of the following is Hurwitz
1) H(s) = S4 +3S2+5S+2
2) H(s) = S6+5S5+4S4- 3S3+2S2+S+3 [02S03]
a. both 1) and 2) are Hurwitz
b. only 1) is Hurwitz
c. 2) is Hurwitz
d. both 1) and 2) are not Hurwitz
15. Imaginary poles and zeros must be [03G01]
a. comptess
b. simple
c. positive
d. none

16. Let N(s) = R where R is a positive real , is positive real by defination . If N(s) is an _ _ _ _ _ _ _ _ _ _ _ function ,
then R is resistance [03M01]

a. impedance
b. reluctance
c. inductance
d. capacitive

17. All driving point immittances of passive networks are [03M02]

a. positive real function
b. zero
c. negative real function
d. positive real function and zero

18. N(s) = k/s, where k is a postive real value by defination as when s is real, N(s) is real. Also when real part of s is
greater then zero, $R_e[N(s)] = s > 0$ **then [03M03]**

a. $R_e[k/s] = \frac{k\sigma}{\sigma^2 + \omega^2} < 0$
b. $R_e[k/s] = \frac{k\sigma}{\sigma^2 - \omega^2} > 0$
c. $R_e[k/s] = \frac{k\sigma}{\sigma^2 + \omega^2} > 0$
d. $R_e[k/s] = \frac{k\sigma}{\sigma^2 - \omega^2} < 0$

19. N(s) is positive real. If N(s) is an impedance function, then the corresponding element is a capactor [03M04]

a. k Farads
b. 1/k Farads
c. 0.55 farads
d. k/s Farads

20. The real part of N(s) is greater than or equal to zero when the real part of s is [03S01]

a. 0
b. > 0
c. < 0
d. = 0

21. Let N(s) = Ls, where L is a positive realnumber, is positive real by definition. If N(s) is _ _ _ _ _ _ _ _ _ _ function,
then L is an inductor [03S02]

a. conductance
b. impedance
c. reactance
d. inductance

22. Let N(s) = Ls, where L is a positive realnumber, is positive real by definition. If N(s) is _ _ _ _ _ _ _ _ _ _ function,
then L is an inductor [03S03]

a. conductance
b. impedance
c. reactance
d. inductance

23. The function $N(s) = \frac{S^3 + S^2 + 3S + 5}{S^2 + 6S + 8}$ **is [04D01]**

a. real function
b. positive real function
c. not a positive real function
d. negative real function

24. If N(s) is positive real function, then its 1/N(s) is also _ _ _ _ _ _ _ _ _ _ _ _ _ and Sum of N(s)and positive real
function [04G01]

a. positive real function
b. real function
c. impedance function
d. none

25. Hurwitz but not strict hurwitz is [04G02]

a. P(s) = (S - 1) (S2 - 1) (S + 2)(S + 3)
b. P(s) = (S - 1) (S2 + 1) (S + 2)(S + 3)
c. P(s) = (S + 1) (S2 + 1) (S - 2)(S - 3)
d. none

26. Given polynomial is hurwitz. If all the co- efficiens of continued fraction expanion [04G03]

a. negutive

b. zero
c. positive
d. none
27. H(s) = S4 + 3S2 + 2 is [04G04]
a. Hurwitz
b. not hurwitz
c. positive real function
d. none
28. Indicate the following polynomials are hurwiz
i) S2 + 4S+10
ii) S4 + S2 +2S2+ 3S+2 [05D01]
a. i) is hurwiz ii) is not
b. i) and ii) are hurwiz
c. ii) is hurwiz i) is not
d. i) & ii) are not hurwiz
29. If the ratio of the even and odd parts of a polynomial is positive real function then it is [05G01]
a. hurwitz
b. real function
c. not hurwitz
d. none
30. If a network is a stabe, then the response is also bounded for [05G02]
a. excitation
b. bounded
c. bounded excitation
d. none
31. the impulse responce
i) h(t) = e $^{-at}$u(t)
ii) h(t) = $e^{-a|t|}$ [05G03]
a. i) & ii) is casual
b. i) & ii) are not causual
c. i) is casual ii) is not cusual
d. none
32. Analysis determines the response for a given [05G04]
a. excitation
b. response
c. excitation of a particular network
d. none
33. H(s) should not have multiple poles is lies in [05S01]
a. w axis
b. z axis
c. iw axis
d. yw axis
34. The implse response of the network must be zeo for [05S02]
a. t > 0
b. t < 0
c. t $\geq$ 0
d. t = 0
35. The implse response of the network must be zeo for [05S03]
a. t > 0
b. t < 0
c. t 0
d. t = 0
36. Acquiring the values of a signal at discreate points in time is known as [06D01]
a. sampling
b. decoposition
c. acquining
d. reconstruction of orginal signal
37. The reciprocal of sampling interval is called [06D02]
a. sampling rate
b. decomposition
c. acqrining
d. reconstruction times
38. A liasing effect occurs when sampling rate is [06G01]
a. greater than Ny quist rate
b. lower than Ny quist rate
c. equal to Ny quist rate

d. none
39. The maximum sampling interval (Ts) for complete recovery of signal from its sampled version is [06G02]
a. 2fm
b. $\frac{1}{2f_m}$
c. $\frac{1}{f_m}$
d. none
40. The maximum sampling interval (Ts) for complete recovery of signal from its sampled version is [06G05]
a. 2fm
b. $\frac{1}{2f_m}$
c. $\frac{1}{f_m}$
d. none
41. For complete recovery of a signal from its sampled resion, the minimum value of sampling rate fs is equal to
[06S01]
a. $\frac{1}{2f_m}$
b. fm
c. $\frac{1}{f_m}$
d. 2fm
42. The Nyquist rate is equal to [06S02]
a. $\frac{1}{2f_m}$
b. fm
c. $\frac{1}{f_m}$
d. 2fm
43. The Nyquist sampling rate for signal f(t) = 10 cos 100 πt is __________ (samples/sec) [06S03]
a. 50
b. 0.01
c. 1000
d. 10
44. The Nyquist sampling rate for signal f(t) = 10 cos 100 πt is __________ (samples/sec) [06S04]
a. 50
b. 0.01
c. 1000
d. 10
45. Which of the following relation are true [07G01]
a. $\phi_{12}(\tau) = f_1(t) \times f_2(t)/t = \tau$
b. $\phi_{12}(\tau) = f_1(t) * f_2(-t)/t = \tau$
c. $\phi_{12}(\tau) = f_1(t) \times f_1(-t)/t = \tau$
d. none
46. Energy contained in signal f(t) is given by [07G02]
a. $E = \int_{-\infty}^{\infty} f(t)^2 dt$
b. $E = \frac{1}{2\pi} \int_{-\infty}^{\infty} f(t)^2 dt$
c. $E = \int_{-\infty}^{\infty} f(t) dt$
d. none
47. Parsevals theorem states that energy is [07G03]
a. $E = \int_{-\infty}^{\infty} |F(\omega)|^2 d\omega$
b. $E = \int_{-\infty}^{\infty} |F(\omega)|^2 df$
c. $E = \int_{0}^{\infty} |F(\omega)|^2 d\omega$
d. none
48. The auto correlations function is maximum at [07G04]
a. large values of τ
b. lower values of τ

c. τ = 0
d. none

49. Sampling interval Ts = is called [07S01]
a. Nyquist rate
b. sampling rate
c. band limited period
d. sampling rate and band limited period

50. A singnal, whose fourier spectrum ranishes beyond certain frequency is known as [07S02]
a. Band limited signal
b. sampling frequency
c. coruer frequency
d. cut-infrequency

51. A band limited signal of finite energy, which has no frequency components higher than `W' hertz, may be
completely recovered from knowledge of its samples taken at the rate of [08G01]
a. W samples per second
b. 5W samples per second
c. 2W samples per second
d. 0.1 W samples per second

52. What is the equation of sin in band limited signal [08G02]
a. $\frac{\sin(2\omega t-n)\pi}{(2\omega t-n)\pi}$
b. $\frac{\sin(2\omega t+n)\pi}{(2\omega t-n)\pi}$
c. $\frac{\cos(2\omega t-n)\pi}{(2\omega t-n)\pi}$
d. none

53. The reconstruction filter is low pass with a pass band extending from [08G03]
a. 0 to ω
b. $-\omega$ to $+\omega$
c. $\omega\ to\ 2\pi\omega$
d. none

54. The minimum sampling rate is defined as [08G04]
a. $\frac{1}{T^1{}_s} = \frac{2(f_c-\omega)}{r} \geq 4\omega\pi$
b. $\frac{1}{T^1{}_s} = \frac{2(f_c+\omega)}{r} \geq 4\omega\pi$
c. $\frac{1}{T^1{}_s} = \frac{2(f_c+\omega)}{r} > 4\omega\pi$
d. $\frac{1}{T^1{}_s} = \frac{2(f_c+\omega)}{r} > 4\omega\pi$

55. As τ value increases, the overlap area of functions [08G05]
a. increases
b. remains constant
c. decreases
d. none

56. Find the auto correlation of the periodic function x(t) = E sin ωt [08S01]
a. $\frac{E\cos\omega\tau}{2}$
b. $\frac{E^2\cos\omega\tau}{2}$
c. $\frac{E\sin\omega t}{2}$
d. $\frac{E^2\sin\omega\tau}{2}$

57. The sampled signal s(t) consits of a sequence of [08S02]
a. positive pulses
b. negative pulses
c. positive pulses and negative pulses
d. no pulses

58. Prior to sampling, a low - pass per alias filter is used to attenuate signals of [08S03]
a. low frequency
b. medium frequency
c. high frequency
d. very low frequency

59. Special intepolation formulae is [09D01]
a. $F(\omega) = \sum_n F(n\omega_0)\sin c(\frac{\omega\tau}{2} - n\pi)$
b. $F(\omega) = \sum_n F(n\omega_0)\cos c(\frac{\omega\tau}{2} - n\pi)$

c. $F(\omega) = \sum_n F(n\omega_0)\sin(\cos c(\frac{\omega\tau}{2} + n\pi))$
d. $F(\omega) = \sum_n F(n\omega_0)\sin c(\frac{\omega\tau}{2} - n\pi)$

60. Filter with $H(\omega) = \frac{1}{1+j\omega}$ and $x(t) = e^{-2t}u(t)$ input energy density of output is [09D02]
a. $\varphi_r(\omega) = \frac{1}{(1+\omega)^2(4+\omega^2)}$
b. $\varphi_r(\omega) = \frac{1}{(1-\omega)^2(4+\omega^2)}$
c. $\varphi_r(\omega) = \frac{\omega}{(1+\omega^2)(4+\omega^2)}$
d. $\varphi_r(\omega) = \frac{\omega}{(1-\omega)^2(4+\omega^2)}$

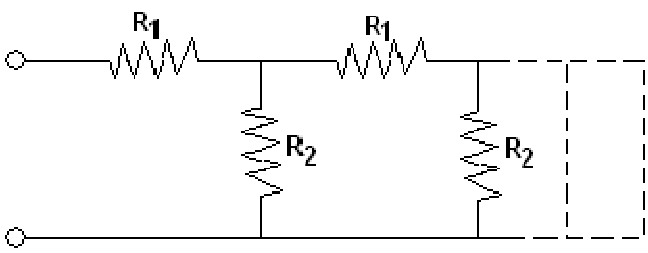
61. Power density specyrum of f(t) [09G01]
a. $S_f(\omega) = \mathop{lt}\limits_{T\to\infty} \frac{|F_T(\omega)|^2}{T}$
b. $S_f(\omega) = \mathop{lt}\limits_{T\to\infty} \frac{|F_T(\omega)|}{T}$
c. S_f (omega) = mathop {lt} limits_{T to infty } left| {F_T (omega)} right|2
d. $S_f(\omega) = \mathop{lt}\limits_{T\to\infty} |F_T(\omega)|$

62. Practical sampling is expresed by [09M01]
a. $P_T(t) = C_o + \sum_{n=0}^{\infty} c_n \cos(n^1 w_s t + \theta_n)$
b. $P_T(t) = C_o - \sum_{n=0}^{\infty} c_n \cos(n^1 w_s t + \theta_n)$
c. $P_T(t) = C_o + \sum_{n=0}^{\infty} c_n \cos(\frac{n^1 t}{w} + \theta_n)$
d. $P_T(t) = C_o - \sum_{n=0}^{\infty} c_n \cos(\frac{n^1 t}{w} + \theta_n)$

63. Which of the relation is true [09S01]
a. $\phi_{12}(\tau) = f_1(t) * f_2(t)/t = \tau$
b. $\phi_{12}(\tau) = f_1(t) * f_2(-t)/t = \tau$
c. $\phi_{12}(\tau) = f_1(-t) * f_2(t)/t = \tau$
d. $\phi_{12}(\tau) = f_1(-t) * f_1(-t)/t = \tau$

64. Auto correlations functions is maximum at [09S02]
a. large values of τ
b. lower values of τ
c. τ = 0
d. τ = 1

65. The driving point impedence of an infinite ladder network as shown in Figure (a) Then R1 = 2 Ω and R2 = 1.5 Ω



Figure(a)
[10D01]
a. 3 Ω
b. 3.5 Ω
c. 3/3.5 Ω
d. ln (1+1/3.5) Ω

66. Which of the following methods decompose the driving point immittance Z(s) [10M01]
a. removal of pole at infinity
b. removal of a constant
c. removal of conjugate imaginary poles
d. removal of pole at infinity, removal of a constant and removal of conjugate imaginary poles

67. The network function F(s) = $\frac{(s+2)}{(s+3)(s+1)}$ represests [10M02]
a. RC impedence
b. RL impedence
c. RC impedence and RL admittance

d. RC admittance and RL impedence

68. The transient current is a network is $i(t) = 2e^{-t} - e^{-5t}, t \geq 0$, the pole - zero configuration of I(s) is [10M03]

a. poles : 1,5 and zero : 9

b. poles : - 1, - 5 and zero : - 9

c. poles : 2, - 1 and zero : - 1 , - 5

d. poles : 2, - 1 and zero : 1, 5

69. The realization of reactance function $Z(s) = \frac{4(s^2+1)(s^2+9)}{s(s^2+4)}$ requires a minimum of [10M04]

a. 4 inductors & 4 capacitors

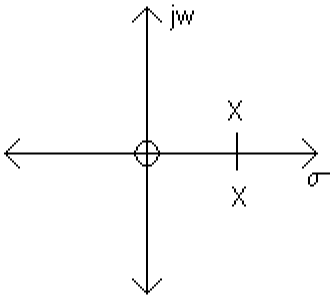
b. 3 inductors & 3 capacitors

c. 1 inductor, 1 capacitor & 1 resistor

d. 2 inductors & 2 capacitors

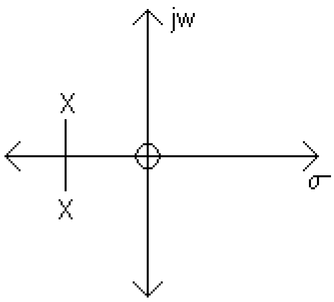
70. The pole - zero configuration of input impedence on S - plane for parallel resononce is [10S01]

a. Consider Figure (a)



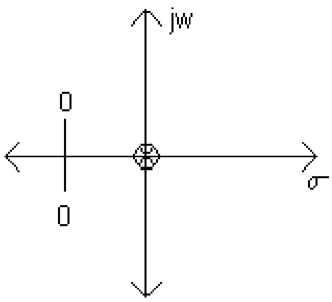
Figure(a)

b. Consider Figure (a)



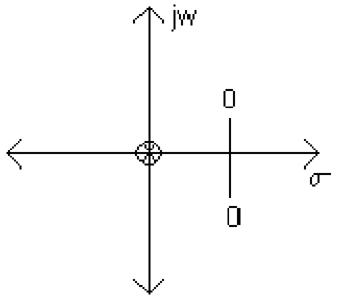
Figure(a)

c. Consider Figure (a)



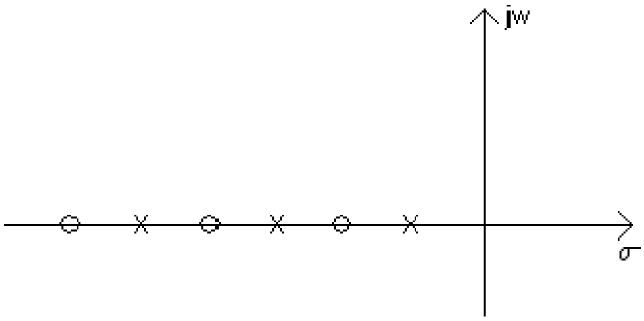
Figure(a)

d. Consider Figure (a)



Figure(a)

71. The pole - zero configuration of an impedence function is shown in figure (a) , the network is



Figure(a)
[10S02]
a. RL realizable
b. RC realizable
c. LC realizable
d. RLC realizable

72. If Z_{RC} has zero at S = ∞ then R_{∞} = [11D01]
a. 2
b. zero
c. infinity
d. 1

73. If pole is at $S = \pm j\omega$, series element is [11D02]
a. inductor
b. RC is series
c. LC is parallel
d. RL is parallel

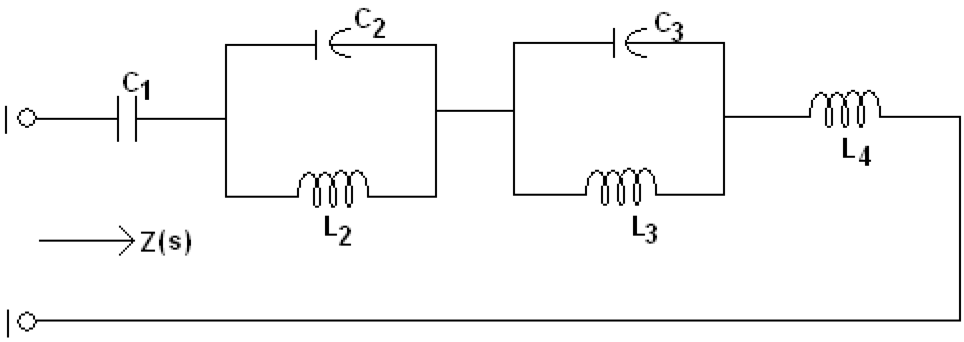
74. Removal of pole at `∞' corresponds to removal of _ _ _ _ _ _ _ _ _ _ from network [11D03]
a. inductor
b. resistor
c. RL
d. capacitor

75. If Z_{RC} has constant at S = ∞ , first element is [11S01]
a. R1
b. C1
c. R1 & C2
d. R2

76. If Z_{RC} has pole at S = 0, last elements is [11S02]
a. C2
b. R1
c. C_{∞}
d. C1

77. If pole is at $S = \pm j\omega$, parallel element is [11S03]
a. RC is parallel
b. LC is series
c. LC is parallel
d. RC is series

78. The given Figure (a) circuit is



Figure(a)
[11S04]
a. cauer I form
b. foster I form
c. cauer II form
d. foster II form
79. If pole is at S = 0 , admittance (parallel element) is [12D01]
a. resistance
b. capacitance
c. inductance
d. inductance and capacitance
80. If pole is at S = 0, impedence (series element) is [12D02]
a. resistance
b. inductance
c. capacitance
d. Resistance and inductance
81. If pole is at S = ∞ , admittance is [12G01]
a. capacitance
b. inductor
c. capacitance and inductor
d. none
82. If pole is at S = ∞, impedence (series element) is [12S01]
a. resistor
b. capacitance
c. inductor
d. capacitance and inductor
83. If Z(s) has a pole at infinity (S = ∞) then N - M = _ _ _ _ _ _ _ _ _ _ _ _ _ [12S02]
a. zero
b. two
c. one
d. infinity
84. Critical frequencies at S = 0 and S = ∞ are known as [12S03]
a. internal critical frequencies
b. external critical frequencies
c. either internal critical frequencies or external critical frequencies
d. not defined
85. Critical frequencies at S = 0 and S = ∞ are known as [12S04]
a. internal critical frequencies
b. external critical frequencies
c. either internal critical frequencies or external critical frequencies
d. not defined
86. If Z has a constant at S = 0, first element is [13D01]
a. R1
b. C1
c. R2
d. C2
87. If first Foster form Z (s) has pole at S = 0 _ _ _ _ _ _ _ _ _ _ is present [13D02]
a. C1
b. R1
c. L0
d. C0

88. From the following functions, pick out the onces which are RC admittances and sythesize the one yoster and one cauer yorn [13G01]

a. $Y(s) = \frac{2(s+1)(s+3)}{(s+2)(s+4)}$

b. $Z(s) = \frac{s^2+6s+8}{s^2+4s+3}$

c. $y(s) = \frac{4(s+1)(s+3)}{s(s+2)}$

d. $Z(s) = \frac{2(s+1)(s+3)}{(s+2)(s+4)}$

89. For voltage transfer function H(s) realizable with a RLC network, the following statement are made [13G02]

a. H(s) cannot have a pole at s = 0

b. H(s) cannot have a pole at s = ± j

c. H(s) cannot have a pole at s = ∞

d. H(s) can have a pole at s = +2

90. For RC network at S =w = ∞ all capacitors are [13S01]

a. open circuited

b. series

c. short circuited

d. parallel

91. One important requirement of `` breaking up" process is [13S02]

a. Z(s) must be positive integer function

b. Zi(s) must be positive integer function

c. Z(s) must be positive real function

d. Zi(s) must be positive real function

92. If Z_{RC} has constant at S = 0, last element is [13S03]

a. R1

b. R2

c. C_∞

d. R_∞

93. The impedence function may be of form with no poles or zero's as imaginary axis and with real part of Z(jw) = 0 at one or more frequencies is known as [14D01]

a. minimum positive function

b. minimum resistance function

c. minimum reactance function

d. minimum function

94. In minimum function which part of impedence function vanishes [14G01]

a. integral part

b. real part

c. rational part

d. none

95. In minimum function which part of impedence function vanishes [14G02]

a. integral part

b. real part

c. rational part

d. none

96. Reduction of poles and zero's of minimum function Z(s) by two are known as [14G03]

a. foster form (II)

b. foster form (I)

c. brune cycle

d. none

97. If first foster form Z_{LC} has pole at S = ∞ _ _ _ _ _ _ _ _ _ is present [14S01]

a. L0

b. C0

c. L_∞

d. C_∞

98. In second foster form Y_{LC} (s) has pole at S= 0 _ _ _ _ _ _ _ _ _ _ is present [14S02]

a. L0

b. C0

c. L_∞

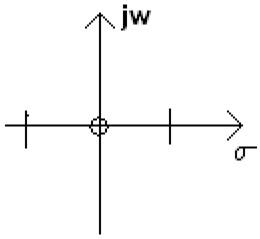
d. C_∞

99. In second foster form Y_{LC} (s) has a pole at s = ∞ _ _ _ _ _ _ _ _ _ _ _ will present [14S03]

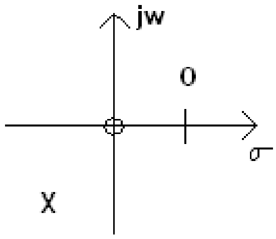
a. L0

b. C0

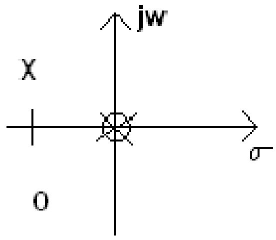
c. L_{∞}
d. C_{∞}
100. The pole zero configoration of input impedence of a series resonant circuit on S - plane is [15G01]



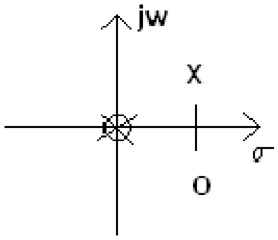
a. Considered Figure (a)
Figure(a)



b. Considered Figure (a)
Figure(a)



c. Considered Figure (a)
Figure(a)



d. Considered Figure (a)
Figure(a)
101. Various methods to systhesis RLC driving point functions [15G02]
a. partial functions
b. continued fractions
c. partial functions & continued fractions
d. none
102. The condition to minimum function have real positive, finite values at s =0 & s = ∞ is [15G03]
a. degree of numerator & denaminator of Z(s) are equal
b. degree of numerator & denaminator of Z(s) are unequal
c. degree of numerator and denaninator are differ by two
d. none
103. The condition to minimum function have real positive, finite values at s =0 & s = ∞ is [15G04]
a. degree of numerator & denaminator of Z(s) are equal
b. degree of numerator & denaminator of Z(s) are unequal
c. degree of numerator and denaninator are differ by two

d. none

104. If x1 is Z(jw1) = jx1 is negative the network is represented at w1 by a [15M01]

a. negative inductor

b. single capacitor

c. negative inductor or single capacitor

d. positive inductor

105. The driving point impedence of as RC network is given by $Z_{(s)} = \frac{2s^2+7s+3}{s^2+3s+1}$ **its camanical realization will be [15M02]**

a. 6 elements

b. 5 elements

c. 4 elements

d. 3 elements

106. If x1 in Z(jw1) = jx1 is positive the network is represented at w1 by a [15S01]

a. single resistor

b. two capacitors

c. single inductor

d. single capaciter

107. If x1 in Z(jw1) = jx1 is positive the network is represented at w1 by a [15S02]

a. single resistor

b. two capacitors

c. single inductor

d. single capaciter

108. The Z - transform X(z) of a sequence x(n) is defined as [16D01]

a. $x(z) = \sum_{n=0}^{\infty} x(n) z^{-n}$

b. $x(z) = \sum_{n=-\infty}^{\infty} x(n) z^{-n}$

c. $x(z) = \sum_{n=-\infty}^{0} x(n) z^{-n}$

d. $x(z) = \sum_{n=1}^{\infty} x(n) z^{-n}$

109. The one - side Z - transform defined as [16D02]

a. $X_1(z) = \sum_{n=-\infty}^{\infty} x(n) Z^{-n}$

b. $X_1(z) = \sum_{n=0}^{\infty} x(n) Z^{-n}$

c. $X_1(z) = \sum_{n=1}^{\infty} x(n) Z^{-n}$

d. $X_1(z) = \sum_{n=-\infty}^{0} x(n) Z^{-n}$

110. The one - sided and two - sided Z - transfarms are equivalent if [16D03]

a. $x(n) \neq 0$ for n< 0

b. x(n) = 0 for n< 0

c. x(n) = 0 for n > 0

d. x(n) ≠ 0 for n > 0

111. Expressing the complex variable Z in polar form we get the equation [16S01]

a. $X(re^{j\omega}) = \sum_{n=-\infty}^{\infty} x(n) r^{-n} e^{-j\omega n}$

b. $X(re^{j\omega}) = \sum_{n=0}^{\infty} x(n) r^{-n} e^{-j\omega n}$

c. $X(re^{j\omega}) = \sum_{n=-\infty}^{\infty} x(n) r^{-n} e^{j\omega n}$

d. $X(re^{j\omega}) = \sum_{n=-\infty}^{\infty} x(n) r^{n} e^{-j\omega n}$

112. The Z - transform is equal to the fourier transform of the sequence if [16S02]

a. $|Z| = 0$

b. $|Z| \neq 0$

c. $|Z| = 1$

d. $|Z| \neq 1$

113. For any given sequence the set of values of Z for which the Z - transform converges is called [16S03]

a. region of divergence

b. region of convergence
c. region of rule
d. fourier rule of convergence
114. The sequence x(n) = u(n) is [17D01]
a. not absolutely summable
b. absolutely summable
c. can't say
d. may or may not be absolutely summable
115. For an inpulse response of an ideal low pass filter [17D02]
a. the Z - transform does not exist
b. the Z - transform exists
c. may or may not exist
d. can't say
116. A power series of the form $X(z) = \sum_{n=-\infty}^{\infty} x(n)z^{-n}$ **is called [17S01]**
a. transformer series
b. fourier series
c. laurent series
d. laplace series
117. The power series $X(z) = \sum_{n=-\infty}^{\infty} x(n)z^{-n}$ **of will converge in annular region of z - plane if [17S02]**
a. $R_{x-} < |Z| < R_{x+}$
b. $R_{x-} > |Z| > R_{x+}$
c. $R_{x-} > |Z| < R_{x+}$
d. $R_{x+} < |Z| > R_{x+}$
118. The z - transform of is given by [17S03]
a. $x(z) = \frac{1}{1-az^{-1}} \quad for \quad |z| > |a|$
b. $x(z) = \frac{1}{1-az} \quad for \quad |z| > |a|$
c. $x(z) = \frac{1}{1-az^{-1}} \quad for \quad |z| < |a|$
d. $x(z) = \frac{1}{1-az^{-1}} \quad for \quad |z| \neq |a|$
119. A finite length sequence is given by $X(z) = \sum_{n=n_1}^{n_2} x(n)Z^{-n}$ **where n1 and n2 are [17S04]**
a. infinite integers
b. finite integers
c. complex integers
d. real no's
120. A right - sided sequence is one for which $\left[X(z) = \sum_{n=n_1}^{n_2} x(n)z^{-1}\right]$ **[18D01]**
a. x(n) = 0 for n > n1
b. x(n) = 0 for n ≠ n1
c. x(n) = 0 for n < n1
d. x(n) = 0 for n = n1
121. The Z - transform of the sequence ax(n)+by(n) is [18D02]
a. aX(z) + bY(z)
b. aX(z) - bY(z)
c. bX(z) + aY(z)
d. bX(z) - aY(z)
122. The region of convergence of $X(z) = \sum_{n=n_1}^{\infty} x(n)z^{-n}$ **is [18G01]**
a. on the circle
b. inside the circle
c. enterior of a circle
d. can't say
123. The Z - transform of the sequence x(n+n0) is [18S01]
a. $Z^{n_0}X(z)$
b. $Z^{n}X(z)$
c. $-Z^{n_0}X(z)$
d. $Z^{-n_0}X(z)$
124. The Z - transform of the sequence anx(n) is [18S02]
a. X(a z)
b. X(az)

c. X(az)
d. - X(a z)
125. The Z - transform of the the sequence nx(n) is [18S03]
a. $-z^{-1}\frac{d(x(z))}{dz}$
b. $z^{-1}\frac{d(x(z))}{dz}$
c. $z\frac{d(x(z))}{dz}$
d. $-z\frac{dx(z)}{dz}$
126. The range of x(- n) is [19D01]
a. $\frac{1}{R_{x+}} < |z| < \frac{1}{R_{x-}}$
b. $R_{x+} < |z| < R_{x-}$
c. $\frac{1}{R_{x+}} < |z| R_{x-}$
d. $R_{x+} < |z| > R_{x-}$
127. The Z - transform of the sequence x(- m, - n) is [19D02]
a. $X\left(Z_1^{-1}, Z_2^{-1}\right)$
b. $X\left(Z_1, Z_2^{-1}\right)$
c. $X\left(Z_1, Z_2\right)$
d. $X\left(Z_1^{-1}, Z_2\right)$
128. The Z - transform of the sequence is [19G01]
a. $\frac{1}{2}\left[X(z) + X^*(z^*)\right]$
b. $\frac{1}{9}\left[X(z) + X^*(z^*)\right]$
c. $\frac{1}{9}\left[X^{-1}(z) + X^*(z^*)\right]$
d. $\frac{1}{2}\left[X(z) + z^{-1}\right]$
129. The Z - transform of the sequence x(n)y(n) is [19G02]
a. $\frac{1}{2\pi j}\oint_c X(v)Y\left(\frac{z}{v}\right)v^{-1}dv$
b. $\frac{1}{2\pi j}\oint_c X\left(\frac{1}{v}\right)Y\left(\frac{z}{v}\right)vdv$
c. $\frac{1}{2\pi j}\oint_c X\left(\frac{1}{v}\right)Y\left(\frac{v}{z}\right)v^{-1}dv$
d. $\frac{1}{2\pi j}\oint_c X(v)Y\left(\frac{v}{z}\right)vdv$
130. The Z - transform of the sequence x(- n) is [19S01]
a. $X\left(\frac{1}{z}\right)$
b. X(z)
c. $X^{-1}(z)$
d. $X^{-1}(z^{-1})$
131. The Z - transform of the sequence x(n) * y(n) is [19S02]
a. X(z) Y(z)
b. X (z) Y(z)
c. X(z) Y (z)
d. $X^{-1}(z)Y^{-1}(z)$
132. A two - diminesional Z - transform is said to be separable if it can be expressed as [20D01]
a. $X(z_1, z_2) = X_1(z_2)X_2(z_1)$
b. $X(z_1, z_2) = X_1(z_1)X_2(z_2)$
c. $X(z_1, z_2) = X_2(z_1)X_2(z_2)$
d. $X(z_1, z_2) = -X_1(z_2)X_2(z_1)$
133. The pole at z = 1 would be concelled and region of convergence of w(n) would extend inward to pole at z = a
when Y(z) is [20D02]
a. $\frac{1-a^{n+1}}{1-az}, n \geq 0$
b. $\frac{1-z^{-1}}{1-az^{-1}}, \quad |z| > |a|$
c. $\frac{z^2}{(z-a)(z-1)}, \quad |z| > 1$
d. $\frac{1}{1-z^{-1}}, \quad |z| > 1$
134. The sequence w(n) can be obtained from inverse Z - transform is [20G02]
a. $\frac{1}{2\pi j}\oint_c \frac{z^{n+1}dz}{(z-a)(z-1)}$

b. $\sum_{n=-\infty}^{\infty} z(n)z(n^2)z^{-n}$

c. $\sum_{n=-\infty}^{\infty} \frac{z(n)}{z(n^2)}$

d. none

135. The Z - transform of the sequence mn x(m,n) is [20S01]

a. $\frac{d^2X(z_1,z_2)}{dz_1dz_2}$

b. $\frac{dX(z_1,z_2)}{dz_1dz_2}$

c. $\frac{d^3X(z_1,z_2)}{dz_1dz_2}$

d. $\frac{d^4X(z_1,z_2)}{dz_1dz_2}$

136. The Z - transform of the sequence is [20S02]

a. $X\left(a^{-1}z_1,b^{-1}z_2\right)$

b. $X\left(az^{-1},b^{-1}z_2\right)$

c. $X\left(az^{-1},b^{-1}z_2^{-1}\right)$

d. $X\left(a^{-1}z^{-1},bz_2\right)$

137. The Z - transform of the sequence ax(m,n)+by(m,n) is [20S03]

a. $ax(z_1,z_2)-by(z_1,z_2)$

b. $ax(z_1,z_2)+by(z_1,z_2)$

c. $bx(z_1,z_2)+ay(z_1,z_2)$

d. $bx(z_1,z_2)-ay(z_1,z_2)$